

SYSTEMS SOLUTIONS



 **System Solutions
For Evaporating Technology**

Areas of Application

API Schmidt®-Bretten evaporating systems with SIGMASTAR® and SIGMAVAP plate evaporators are being utilized successfully in various branches of the food industry, in the organic and chemical industries as well as in wastewater treatment.

SIGMASTAR®- and SIGMAVAP plate evaporators offer outstanding performance day in, day out, handling a diverse range of products, including viscous fluids, purée, and mud and liquids with fouling tendencies that cannot be processed with inadequate falling film evaporator technology.

Industry

Fruit juice, fruit purées, plant extracts, vegetable juice, vegetable purées, peptides, gelatins, milk, whey, buttermilk. Extracts of: malt, coffee, tea, sorghum. Beer wort, cane and beet sugar, liquid-sugar, etc.

Chemical and Pharmaceutical Industry

Lye, acids, salt solutions, aluminium sulfates, magnesium sulfates, magnesium chlorides, amines, sorbitols, aromas, raw and interstage products for plastics and synthetic fibers, synthetic stick water, pharmaceutical products and others.

Wastewater Treatment

Treatment of various types of wastewater arising from industry, food production, recycling plants, electroplating, fermentation deposits and mash, et al.

Industry for Organic Natural Products

Fish stick liquor, skin and bone stick water, protein hydrolysates, technical and photo-gelatins, oils, molasses, yeasts, yeast extracts, worts, extracts from hops, plants, tanning, spring water, glucose, dextrose, fructose, maltose, boiling water (maize, wheat, potato), starches and others.

Technical Versions

Materials and Specifications

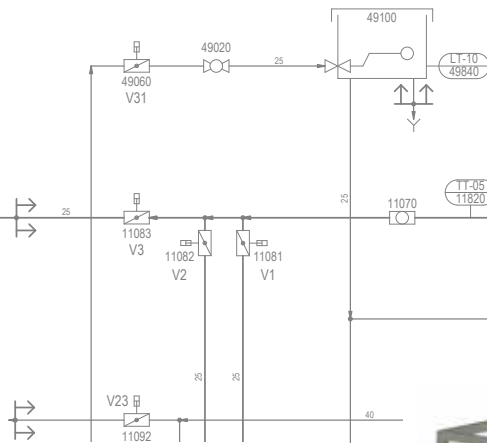
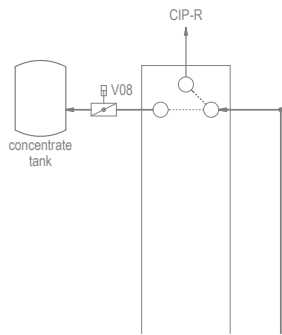
Plate Materials:	All prevalent stainless steel, Titanium, Titan Pd, Hastellov*
Gasket Materials:	EPDM, NBR, FPM*
Versions:	-1 to 16 bar*
Exchanges Surface:	SIGMAVAP: 0,25 - 3 m ² per plate SIGMASTAR®: 0,45 -1,5 m ² per plate
SIGMASTAR® Range:	45V, 90V, 150V
SIGMAVAP Range:	26M, 35M, 48M, 66M, 156M

Capacity Data

Feed Capacity:	0,5 t/h to 120 t/h
Evaporating Capacity:	500 kg/h to 75000 kg/h
Evaporating:	In excess of 99% dry substance**
Specific Steam Consumption:	1.0 to 0.15 kg steam per kg evaporation
Viscosity:	to 2500 mPas**
Heating System:	Direct steam or thermal or mechanical vapor compression

* dependent on design - ** dependent on product

Application Examples



2-stage SIGMASTAR® 90V Evaporating Plant
protein hydrolyzate - evaporating capacity 2,000 kg/h



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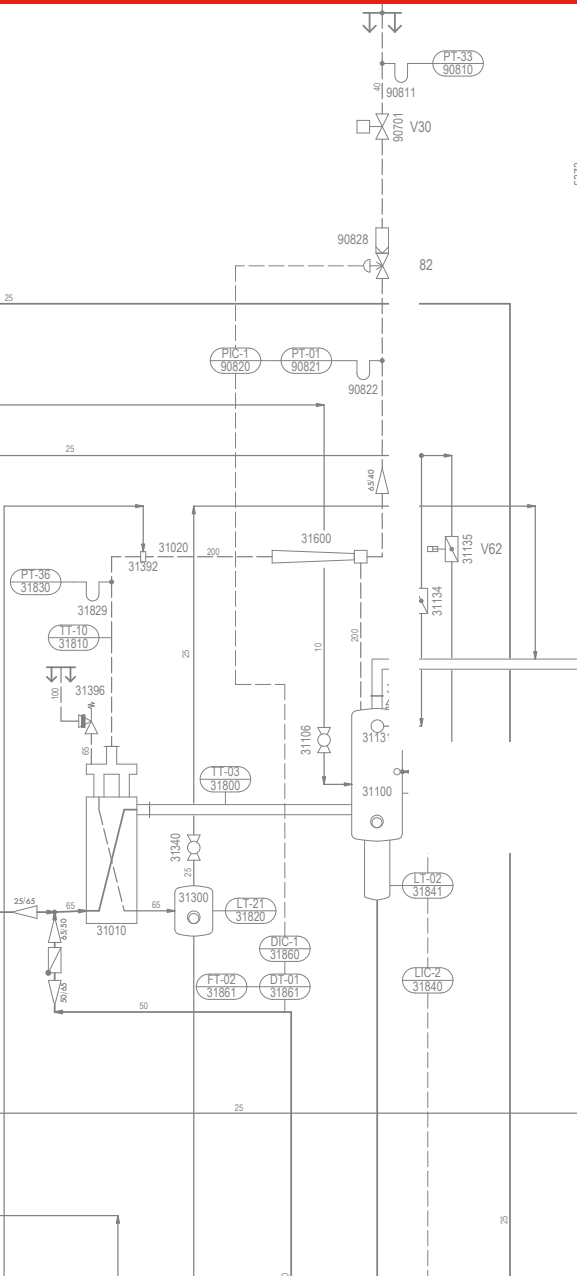
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V60



5-stage SIGMASTAR® 90V Evaporating Plant with thermal vapor compressor
for apple juice - evaporating capacity 20,000 kg/h

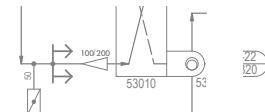
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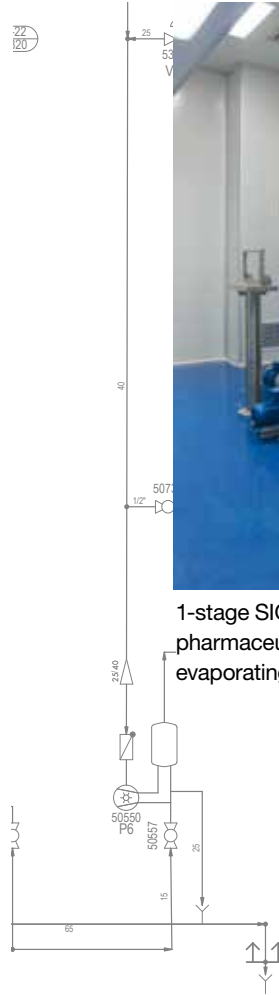
2-stage SIGMASTAR® 90V Evaporating Plant
plant extracts - evaporating capacity 3,000 kg/h



1-stage SIGMAVAP Pilot Plant
various products - evaporating capacity up to 50 kg/h



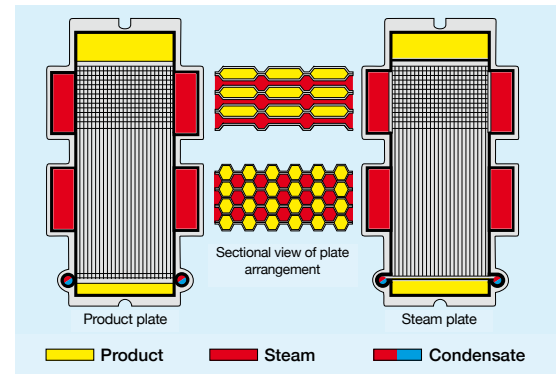
1-stage SIGMAVAP Evaporating Plant
pharmaceutical products -
evaporating capacity 500 kg/h



Order No.			<i>Schmidt</i> API Schmidt-Bretten GmbH & Co.KG
Best Customer			
Freigabedatum		Gepr./Approved	
Ent./Drawn		Zeichnungs-Nr./Drawing No.	
Benennung/Description P&I Diagramm 1-stufige EDA mit TBV 1-effect evaporator plant with TVR		Blatt/Sheet 1 von/1	
Schubstrom nach DIN 34 beachten		Maßstab/Scale 1:1	Copyright reserved

Technology

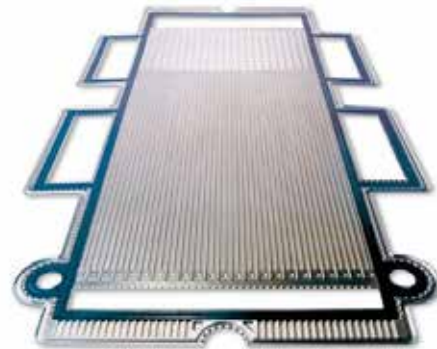
- Even product distribution based on connecting pipes for various feeders that enable flexible processing and part loading optimization
- Gentle product handling due to minimized dwelling time achieved by short flow distances and high product velocity
- Minimal pressure loss as a result of accurate cross-section measurements
- High speed rising film vapor achieves the greatest possible concentration and viscosity
- Clearly defined direction of product prevents overconcentration in any area with a minimal degree of fouling and no product waste
- Economical heat exchange surfaces compared to other evaporating systems



Sectional view of a SIGMASTAR® 90V plate arrangement

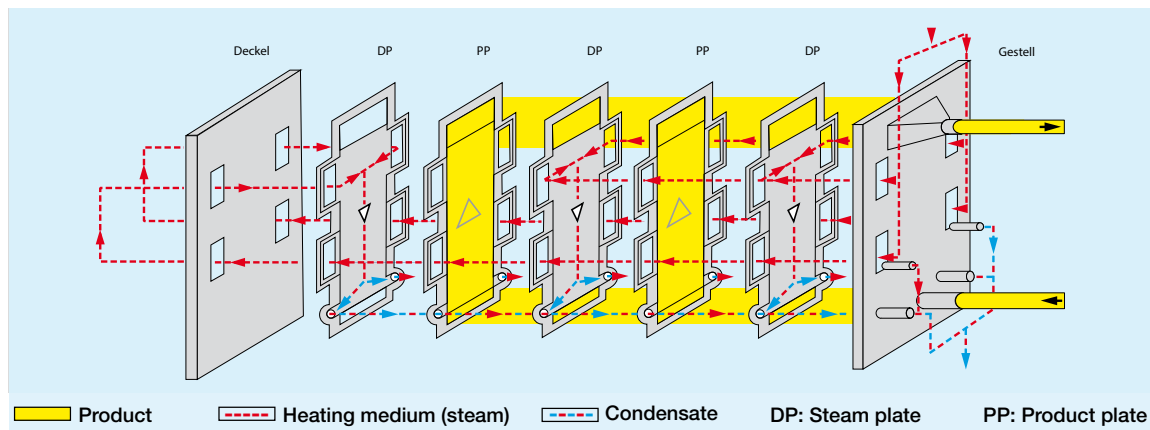


SIGMASTAR® 150V plate



SIGMASTAR® 90V plate

- Nothing is welded to the plates which means there is no corrosion and consequently no problems created by fibrous materials
- Capacity is flexible by varying the number of plates. Adaptations and alterations are achieved simply by adding or removing plates



Design of a SIGMASTAR® 90V plate evaporator

A world of heat transfer solutions

API Heat Transfer's global presence includes manufacturing facilities, R&D locations, and sales support throughout the world, all focused on one goal—to better serve our customers.



For more information about our heat transfer products, contact our API Heat Transfer sales representative or visit apiheattransfer.com or apiheattransfer.de

Germany

API Schmidt-Bretten GmbH & Co. KG

Langenmorgen 4
75015 Bretten
Germany

+49 7252 530

USA

API Heat Transfer Inc.

2777 Walden Avenue
Buffalo, NY, 14225
USA

+1 716 684 6700

China

API Heat Transfer

156 Qingqiu Street, 3rd District
Suzhou Industrial Park
Suzhou, Jiangsu 215126
China

+86 512 8816 8000

GLOBAL HEADQUARTERS

2777 Walden Avenue | Buffalo, NY 14225 USA | +1.716.684.6700 | sales@apiheattransfer.com